It All Adds Up to the Versatile Pig

Grade Level: 4-6

Approximate Length of Activity: One class period

Objectives:

Teacher:

1. Provide students with an opportunity to develop math skills through word problems.
2. Help the students learn what products pigs provide and how pigs are important to us.

Students:

1. Build mental math skills by solving word problems.
2. Learn how pigs play an important role in the daily lives of many people.

Michigan Content Standards: (Math) III.1.1; IV.2.3; V.1.2; V.1.3; V.1.4

Introduction:

The pig was among the first animals to be domesticated, as early as 7000 BC. Hernando DeSoto, an explorer, brought the first pigs to America in 1539. Today, pigs are raised across the U.S. and in almost every other country in the world.

Producers raise pigs today that weigh more, grow more efficiently, and yield more lean meat than ever before. Bacon, pork sausage, pork chops, and ham all come from pigs, but there are about 500 different by-products of pigs as well. Some examples of by-products are fertilizers, glass, china, floor wax, chalk, crayons, and medicine.

Sows, which are female pigs, give birth to litters of piglets twice a year. Each litter usually has seven to ten piglets. Giving birth to piglets is also called farrowing. Some pork producers have “farrow to finish” farms, which means the pigs are bred, born, and fed on the farm until they are taken to the market. Pigs are weaned from their mother when they are two to four weeks old. Farmers feed their pigs a well balanced diet twice a day. Pigs eat ground-up corn, soybeans, wheat, and grain sorghum. They are usually taken to market when they weigh 220-260 pounds. By this time, they are five to six months old.

Pigs are also very important to society for the life-supporting and life-saving products we derive from them. Pigs provide a source of nearly 40 drugs and pharmaceuticals. Pigs are very much like humans because their heart and other organs work the same way. This is very beneficial to us because if a certain medication helps pigs, then chances are it will also help humans. Insulin from pigs is important because its chemical structure most nearly resembles that of humans. Pigskin is used in treating massive burns and injuries, and in healing persistent skin ulcers because the skin is similar to ours. Heart valves from pigs are surgically implanted in humans to replace human heart valves that are weakened due to disease or injury.

Materials Needed:

- “A pig Grows Up” worksheet
- “Pig By-Products Math” worksheet
- Scratch paper

Activity Outline:

1. Discuss the information from the introduction with your students. Make sure they understand that we derive more products from pigs than just meat.
2. Hand out a “Pig Grows Up” worksheet to each student. Have the students answer the questions individually or in groups. The students may need to use scratch paper for multiplication and division problems.
3. Go over the answers of a “Pig Grows Up” worksheet with the students. If the student gets a wrong answer, go through the steps of the problem with them so they understand the right way to do the problem.
4. Next, have the students do the “Pig By-Products Math” worksheet. They may need scratch paper again. When the students are finished, read through each sentence so the students can check and see if they have the right answers.

Discussion Questions:

1. Where are pigs raised?
2. What kinds of meat come from pigs?
3. What is a piglet?
4. What do pigs eat?
5. How long does it usually take a pig to reach market weight?
6. In what ways are pigs beneficial to humans?

Related Activities:

1. Research pigs and find out more about their useful by-products.
2. Have the class read *Charlotte’s Web* and compare Wilbur to a real pig.
3. Visit a pig farm and have a day of math activities such as finding perimeters of a fields, garden, pig housing, estimating the weight of a pig, the amount a silo or storage bin holds, etc.
4. Hold a Pig Fest and have students bring in foods or products made from pigs.
5. Call your county Farm Bureau to assist in bringing a pig farmer into your classroom. Let him or her talk about their pig operation and all they do to care for their pigs.
6. Check out the National Pork Producers Council’s Web site at www.nppc.org to find out more about food nutrition information and food fun for kids.

To be used with:
It All Adds Up to the Versatile Pig **Name**_____

A Pig Grows Up

A piglet usually feeds from its mother until it is four to six weeks old and weighs about 25 pounds. Then it begins to eat feed grain and is known as a feeder pig. It takes about six months for a pig to reach market weight of 250 pounds.

1. After a pig stops feeding from its mother, how many pounds does it have to gain to be ready for market? _____ lbs.

2. Once a pig starts eating feed grains, how many bushels of feed must a pig eat to reach market weight? (Count them in the picture). _____ bushels

3. Each bushel contains about 58 pounds of feed. How many pounds of feed does the pig eat? _____ lbs.

4. About 120 pounds of the feed that each pig eats is protein and mineral supplements. How much of the feed is corn? _____ lbs.

5. What percent of the total feed is made up of corn? (Round to the nearest whole number. _____ %

6. How many piglets are usually in a litter? (Count them in the picture.) _____ piglets

7. How many bushels of feed will the farmer need to raise all the pigs? _____ bushels

8. How many pounds of corn will all eight pigs eat? _____ lbs.

9. If all the pigs were at the average market weight when they are sold, what was the total weight of all eight pigs? _____ lbs.

10. If the farmer sold the pigs for 40 cents per pound, how much money was paid for all of the pigs? $ _____

11. How much was one pig worth? $ _____

To be used with:
It All Adds Up to the Versatile Pig **Answer Key**

A Pig Grows Up

A piglet usually feeds from its mother until it is four to six weeks old and weighs about 25 pounds. Then it begins to eat feed grain and is known as a feeder pig. It takes about six months for a pig to reach market weight of 250 pounds.

1. After a pig stops feeding from its mother, how many pounds does it have to gain to be ready for market? **225** lbs.

2. Once a pig starts eating feed grains, how many bushels of feed must a pig eat to reach market weight? (Count them in the picture). **15** bushels

3. Each bushel contains about 58 pounds of feed. How many pounds of feed does the pig eat? **870** lbs.

4. About 120 pounds of the feed that each pig eats is protein and mineral supplements. How much of the feed is corn? **750** lbs.

5. What percent of the total feed is made up of corn? (Round to the nearest whole number. **86** %

6. How many piglets are usually in a litter? (Count them in the picture.) **8** piglets

7. How many bushels of feed will the farmer need to raise all the pigs? **120** bushels

8. How many pounds of corn will all eight pigs eat? **6000** lbs.

9. If all the pigs were at the average market weight when they are sold, what was the total weight of all eight pigs? **2000** lbs.

10. If the farmer sold the pigs for 40 cents per pound, how much money was paid for all of the pigs? $ **800**

11. How much was one pig worth? $ **100**

To be used with:
It All Adds Up to the Versatile Pig **Name** _____

Pig By-Products Math

Pigs are raised mainly for meat. Other parts of the pig's body are used to manufacture items, which are called by-products. To discover more about these by-products, fill in the blank words by doing the math problems and using the answer code to fill in the letters.

41	40	19	47	43	17	75	16	33	54	48	30	37	77
Q	P	V	O	U	W	Y	B	A	D	F	G	H	C

53	56	67	18	39	25	27	49	81	36	13	23
J	K	N	R	L	M	E	S	I	T	Z	X

1. Bones and skin from the pig are used to make gelatin and _____ _____ _____ _____.
(6x8)-12 (3x9)=12 (8x3)+19 (3x6)+9

2. Glycerin is used in making lipstick and _____ _____ _____ _____ _____ _____ _____.
(8x8)+13 (2x18)-18 (8x6)-15 12+(9x7) (7x8)-9 (9x9)-14 9+(6x5)

3. Glass and fertilizer can be produced from _____ _____ _____ _____ _____ _____ _____ _____.
(4x8)-16 18+29 (9x6)+13 (2x13)+1 50-(5x5) 35-8 (6x6)-3 (4x9)+3

4. Dried bones are used to make buttons and _____ _____ _____ _____ _____ dishes.
5+(8x9) 54-17 (3x3)x9 (8x10)-13 (12x4)-15

5. Pig pancreas glands are a source of insulin, which is used to treat
_____ _____ _____ _____ _____ _____ _____ _____.
5+(7x7) (8x9)+9 (10x3)+3 4+(4x3) (60/3)+7 (9x2)x2 (15x2)-3 (7x1)x7

6. Because it is like human skin, pig skin is used in treating _____ _____ _____ _____ _____.
32-16 3+(5x8) 25-7 (9x8)-5 (8x8)-15

7. Pigs can help humans who have growth problems through the use of their
_____ _____ _____ _____ _____ _____ _____ _____.
(127x3)+1 55-8 30-(2x6) (5x3)+10 (8x8)-17 (33x2)+1 51-24 1+(12x4)

8. Pig heart valves have been implanted in human _____ _____ _____ _____ _____ _____.
18x19 46-19 (13x3)-6 (6x6)-18 (90/10)x4 (49-0)x1

Adapted from the Illinois Pork Producers Association, 6411 S. Sixth St., Springfield, IL 62707, (217) 529-3100.

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